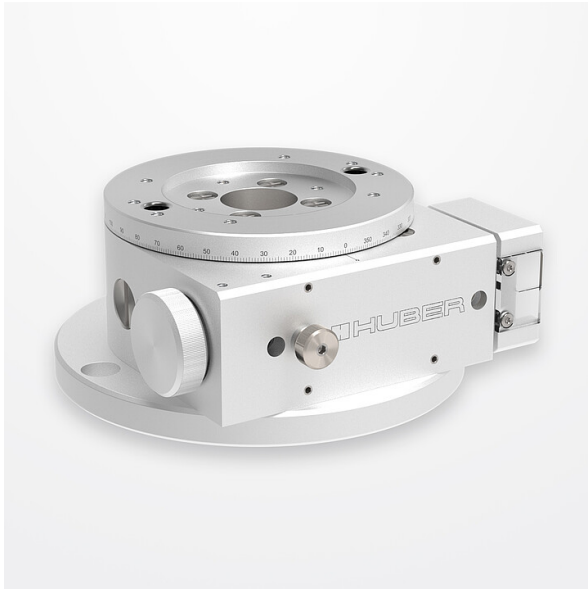




## Goniometer 408

- four precision configurations
- two load configurations

### Application specific versions:

- vacuum suitable
- antimagnetic
- radiation resistant
- in black

### Modularly individually configurable:

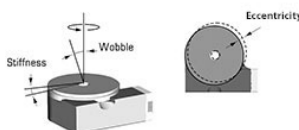
- from basic model to high-end system
- to multi-axis systems
- with individual transmission aperture
- with customer-specific hole pattern

### Specifications:

|                               |                  |
|-------------------------------|------------------|
| Travel range [°]:             | 360              |
| Material (housing/worm gear): | Aluminium/Bronze |
| Gear ratio:                   | 180:1            |
| Resolution [°]:               | 0.002 **         |
|                               | 0.001 minimum    |
| Min. drive torque [Nm]:       | 0.05             |
| Max. output torque [Nm]:      | 1.2              |
| Stiffness [μrad/Nm]:          | 22               |
| Weight [kg]:                  | 1.5              |
| Flange size [mm]:             | 32               |
| Transm. aperture [mm]:        | 20               |

\*\* step motor, 1000 steps/revolution

### Precision configurations:



X1

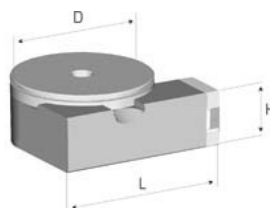
X2

X3

XE

|                              |     |    |    |            |
|------------------------------|-----|----|----|------------|
| Accuracy ["]:                | ≤60 | 40 | 25 | on request |
| Repeatability (unidir.) ["]: | ≤4  | 2  | 2  | on request |
| Reversal error ["]:          | ≤30 | 20 | 10 | on request |
| Eccentricity [μm]:           | ≤8  | 5  | 2  | 2          |
| Wobble ["]:                  | ≤18 | 10 | 8  | 8          |

### Dimensions [mm]:



|    |    |    |
|----|----|----|
| D: | L: | H: |
| 80 | 95 | 40 |

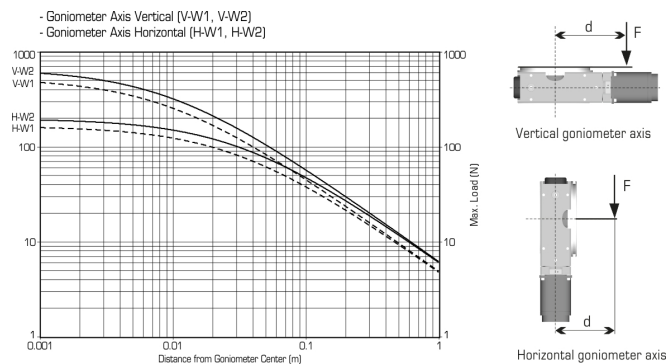
### Accessories:

|                     |                         |
|---------------------|-------------------------|
| Motors:             | 2-/5-Ph.<br>Servo/DC    |
| Hand wheels:        | 0032                    |
| Gear boxes:         | 2042.10*<br>2042.20*    |
| Limit switches:     | optional                |
| Zero-point control: | 9100                    |
| Encoder <b>XE</b> : | incremental<br>absolute |
| Control system:     | 9300                    |

\* adaptor required: M301.301-001

### Load configurations:

|               |             | vertical gonio. axis | horizontal gonio. axis |
|---------------|-------------|----------------------|------------------------|
| Max. load [N] | <b>W1</b> : | 400                  | 125                    |
| Max. load [N] | <b>W2</b> : | 650                  | 200                    |



- vertical goniometer axis (V- **W1** , V- **W2** )
- horizontal goniometer axis (H- **W1** , H- **W2** )

